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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/599,003	09/18/2006	Kazuhiro Hirose	20239/0204681-US0	3079
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DARBY & DARBY P.C. P.O. BOX 770 Church Street Station New York, NY 10008-0770			EXAMINER HOBAN, MATTHEW E	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 02/17/2009	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/599,003

**Applicant(s)**

HIROSE ET AL.

**Examiner**

Matthew E. Hoban

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, and 3-7 rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz in 5198137 in view of Keyzelman in 2004/0191519 and 6348265.

**Regarding Claim 1:** Rutz teaches a composition useful in making magnetic components, and specifically "magnetic core components". The composition of Rutz makes use of iron particles, thermoplastic resin, and a lubricant in the form of boron nitride. In this composition Rutz teaches that the iron particles are coated with a thermoplastic material, where this material is present in an amount from .001-15 wt% (Column 3, Lines 43-51). Rutz then speaks about the lubricant he uses in Column 5, Lines 50-70 stating that boron nitride (hexagonal and inorganic) is a useful lubricant in the amount of under 1 wt%, where the particle size is below 20 microns. It should be stated that these ranges overlap with those of the instant claim (where the amount of thermoplastic also shares an endpoint). One of ordinary skill in the art could select from the overlapping portions of these ranges and thus arrive at the claimed invention based on the teachings of Rutz. Overlapping ranges have been held to create a prima facie case of obviousness. See MPEP 2144.05.

Rutz does not teach the insulating coating containing metallic salt phosphate.

However, Kejzelman teaches in paragraph 2-3, where it is taught that iron magnetic particles used in soft magnetic cores are normally made of insulated materials. The reason for the insulating coating is to reduce eddy-current loss in the composition. Kejzelman states that suitable coatings for this goal are phosphorus containing coatings as seen in 6348265, (patent associated with the phosphorus salt coated Somaloy 500).

Therefore, the obvious combination of Keyzelman and Rutz actually improves the properties of Rutz in that it lowers the eddy-current loss of Rutz. Therefore, the combination of references produces an improved product, which would have been clearly motivated and obvious to one of ordinary skill in the art. Furthermore, both references are directed towards soft magnetic powder cores.

**Regarding Claim 3:** Rutz teaches using boron nitride as a lubricant. Boron Nitride is both hexagonal and inorganic. (Column 5, Lines 50-70)

**Regarding Claim 4:** Rutz teaches using under 1 wt% of boron nitride. (Column 5, Lines 50-70)

**Regarding Claim 5:** Rutz teaches using thermoplastic resin in an amount from .001-15 wt% (Column 3, Lines 43-51).

**Regarding Claim 6-7:** Rutz creates cores from his powder which can be seen in table 2. As can be seen, the density of cores at 0 and 0.1 wt% boron nitride is generally above 95%. One of ordinary skill would thus expect the composites from the range of Rutz's teachings to also fall in this same range. The modification of this product by Keyzelman would have no effect on this density as the density is based on packing density and the surface coating is strictly that and has no effect on the relative size

distribution or shape of the particles. One would expect this because the packing density and thus the final density of the composite is based on these two factors.

5. Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz in 5198137 in view of Keyzelman in 2004/0191519 as applied to claim 1 above, and further in view of Hanano in 5039435.

Neither Rutz nor Keyzelman teach or are silent as to the use of a metallic soap in their lubricant

However, Hanano teaches that it is beneficial to complex the inorganic lubricant, such as boron nitride, with the organic complexes of the metallic salt (See Claim 1 and the Section entitled Function). Hanano teaches that that this combination solves the problem of water being included in the mold and the inherent water solubility of the inorganic particles. Therefore, the teachings of Hanano improve the process by which the composition of Rutz in view of Keyzelman is made, which provides clear motivation to one of ordinary skill in the art to combine the two references.

6. Claims 9-14 rejected under 35 U.S.C. 103(a) as being unpatentable over Rutz in 5198137 in view of Bankson in 4177089.

**Regarding Claim 9:** Rutz teaches a composition useful in making magnetic components, and specifically “magnetic core components”. The composition of Rutz makes use of iron particles, thermoplastic resin, and a lubricant in the form of boron nitride. In this composition Rutz teaches that the iron particles are coated with a thermoplastic material, where this material is present in an amount from .001-15 wt% (Column 3, Lines 43-51). Rutz then speaks about the lubricant he uses in Column 5, Lines 50-70 stating that boron nitride (hexagonal and inorganic) is a useful lubricant in the amount of under 1 wt%, where the particle size is below 20 microns. It should be stated that these ranges overlap with those of the instant claim (where the amount of thermoplastic also shares an endpoint). One of ordinary skill in the art could select from the overlapping portions of these ranges and thus arrive at the claimed invention based on the teachings of Rutz. Overlapping ranges have been held to create a prima facie case of obviousness. See MPEP 2144.05.

Rutz does not teach the insulating coating containing metallic oxides.

However, Bankson teaches in the paragraph bridging columns 2 and 3, where it is taught that iron magnetic particles used in soft magnetic cores are normally made of insulated materials. The reason for the insulating coating is to reduce eddy-current loss in the composition (as seen as in 4-5 of Column 1). Bankson states that suitable coatings for this goal are taught in 2105070 (incorporated by reference). This coating comprises silica in a clay-like material. Therefore, the obvious combination of Bankson

and Rutz actually improves the properties of Rutz in that it lowers the eddy-current loss of Rutz. Therefore, the combination of references produces an improved product, which would have been clearly motivated and obvious to one of ordinary skill in the art. Furthermore, both references are directed towards soft magnetic powder cores.

**Regarding Claim 10:** Rutz teaches using boron nitride as a lubricant. Boron Nitride is both hexagonal and inorganic. (Column 5, Lines 50-70)

**Regarding Claim 11:** Rutz teaches using under 1 wt% of boron nitride. (Column 5, Lines 50-70)

**Regarding Claim 12:** Rutz teaches using thermoplastic resin in an amount from .001-15 wt% (Column 3, Lines 43-51).

**Regarding Claim 13-14:** Rutz creates cores from his powder which can be seen in table 2. As can be seen, the density of cores at 0 and .1 wt% boron nitride is generally above 95%. One of ordinary skill would thus expect the composites from the range of Rutz's teachings to also fall in this same range. The modification of this product by Bankson would have no effect on this density as the density is based on packing density and the surface coating is strictly that and has no effect on the relative size distribution or shape of the particles. One would expect this because the packing density and thus the final density of the composite is based on these two factors.



***Response to Arguments***

7. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. The arguments are based on the fact that the primary reference would only have a thin ferrous oxide coating. The claims were amended to include only certain oxides and also phosphorous salt based coatings. Based on the amendment, new art has been found which teaches such coatings. No arguments based on other aspects of the primary reference have been made.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Hoban whose telephone number is (571) 270-3585. The examiner can normally be reached on Monday - Friday from 7:30 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/  
Supervisory Patent Examiner, Art Unit 1793

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